| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/283,676 | 04/01/1999 | KARL G. AUERBACH | CISCP074 | 1300 |

22434        7590        05/22/2002

BEYER WEAVER & THOMAS LLP
P.O. BOX 778
BERKELEY, CA 94704-0778

| EXAMINER |
|---|
| NAJJAR, SALEH |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2154 | |

DATE MAILED: 05/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>30 January 2002</u> .

2a)☐ This action is **FINAL**.    2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>1-35</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-11 and 13-35</u> is/are rejected.

7)☒ Claim(s) <u>12</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

     If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____ .

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

     a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:   .

1.      This action is responsive to the communication filed on January 30, 2002. The restriction requirement and all rejections made in the previous actions is withdrawn. Claims 1-35 are pending examination. Claims 1-35 represent a method and apparatus directed toward proximity as an aid to caching and secondary serving of data.

2.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3.      Claims 1-5, 9, 13-14, 16-18, 29, 31-32, and 34-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Rabinovich, U.S. Patent No. 6,256,675 (referred to hereafter as Rab).

Rab teaches the invention as claimed including a system and method for allocation requests for objects and managing replicas of objects on a network (see abstract).

As to claim 1, Rab teaches a method of providing content to a server in anticipation of a need for the content by network clients, the method comprising:

(a) determining the location of a client or group of clients that are likely to access the content; (b) determining a first proximity between the client or group of clients and a first server capable of storing and serving the content (see fig. 3; col. 7, lines 45-55, Rab teaches determining distance metrics of clients with respect to first server or host); (c) determining a second proximity between the client or group of clients and a second server capable of storing and serving the content (see col. 7-8; Rab teaches determining distance metrics of clients with respect to second server or host); and

(d) based upon the relative values of the first and second proximities,"loading content into one of the first and second servers (see col. 8, Rab discloses that content is replicated or loaded to the host that has the best fit distance metrics with respect to the requesting client).

As to claim 2, Rab teaches the method of claim 1 above, wherein loading the content to the second server is performed automatically by a content control system (request distributer) on the network (see fig. 1).

As to claim 3, Rab teaches the method of claim 2 above, wherein performing (b), (c), and (d) is accomplished by the content control system (request distributer) (see figs. 1-3; col. 7-8).

As to claim 4, Rab teaches the method of claim 1 above, wherein the first and second proximities are determined dynamically by a content control system (request distributer) (see col. 7-8).

As to claim 5, Rab teaches the method of claim 1 above, wherein the content is loaded to the server that is most proximate the client or group of clients (see col. 8-9, Rab discloses that content is replicated or migrated to the host or server that has the best fit distance metrics with respect to the client).

As to claim 9, Rab teaches the method of claim 1 above, wherein at least one of the first and second proximities is determined by a combination of the following factors: bandwidth, number of hops, congestion, noise and loss on a network segment, and charges incurred to send (see col. 7-9).

Claims 13 does not teach or define any new limitations above claim 1 and therefore is rejected for similar reasons.

As to claim 14, the rejection of claim 1 above is fully applied herein.

Claim 14 ads the feature of C-E) identifying a second server that does not currently store said content but has the capability of storing and serving the content, determining a first and second proximity between the client and first and second server, and if the relative values of the first and second proximities meet a defined constraint, loading the content into the second server (see col. 7-9, Rab discloses that content may be migrated or replicated across the network to another server if request and distance metrics are better fit with respect to the second server and client).

As to claim 16, Rab teaches a method of selecting a server to fill a client request for content, the method comprising:

(a) determining that one or more clients needs or will need to receive the content (see figs. 1-3; col. 7-9, Rab discloses that a request is evaluated at the request distributer for requested content); (b) determining a first proximity between the one or more clients and a first server capable of supplying the content; (c) determining a second proximity between the one or more clients and a second server capable of supplying the content (see figs. 1-3; col. 7-9, Rab discloses that distance metrics are determined with respect to geographical position from the client to a first and second hosts or servers); and

(d)     based upon the relative values of the first and second proximities, choosing one of the first and second servers to fill client requests for the content wherein at least one of the first and second proximities is determined by a combination of the following factors: bandwidth, number of hops, congestion, noise and loss on a network segment, and charges incurred to send (see col. 8, Rab discloses that request for content is sent to the host that has the best fit distance, cost or delay metrics with respect to the requesting client).

As to claim 17, Rab teaches the method of claim 16, wherein the first and second proximities are determined dynamically by a content control system (request distributer (see figs. 1-3).

As to claim 18, Rab teaches the method of claim 16 above, wherein the content is provided by the server that is most proximate to the one or more of clients (see figs. 1-3; col. 7-9, Rab teaches that the content is provided by the host that has the best fit distance metrics with respect to the client).

As to claim 20, Rab teaches the method of claim 16 above. wherein at least one of the first and second proximities is determined by a combination of the following factors: bandwidth, number of hops, congestion, noise and loss on a network segment, and charges incurred to send (see col. 7-9).

Claims 29, does not teach or define any new limitations above claims 1-5, 9, 13-14, 16-18, 20 and therefore is rejected for similar reasons

As to claims 31-32, and 34-35, the claimed feature of an interface, a processor, provided on a PC having an operating system, mass storage controller, and one or

more proximity detection tools are inherently disclosed by Rab (see figs. 1-11, col. 6-14).

4.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.      Claims 6-8, 19, 30 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rab.

Rab teaches the invention substantially as claimed including a system and method for allocation requests for objects and managing replicas of objects on a network (see abstract).

As to claims 6-8, Rab teaches the method of claim 1 above.

Rab does not explicitly teach the claimed limitation of sending compressed multimedia data. Rab does teach that content stored on the nodes represent any file or graphic files adapted to be read electronically (see col. 6).

However, "Official Notice" is taken that the concept and advantages of requesting or sending multimedia data in compressed format is old and well known in the network data communication art. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Rab by specifying compressed data multimedia to conserve bandwidth when data is transmitted across a network.

As to claims 19, and 33, Rab teaches the method of claim 16, and 29 above respectively.

Rab fails to teach a request for a multimedia content or a video server. Rab does teach that content stored on the nodes represent any file or graphic files adapted to be read electronically (see col. 6).

However, multimedia content or video content request on the network is old and well known in the Internet. It would have been obvious to one of ordinary skill in the art

at the time of the invention to modify Rab by specifying multimedia or video content at the replica sites.

As to claim 30, Rab fails to teach the claimed limitation wherein the interface, processor, and memory are provided on a router. Rab discloses a request distributer that routes requests to the appropriate sever (see figs. 1-3; col. 7-11).

However, "Official Notice" is taken that the concept and advantages of implementing request routing decisions at a router is old and well known in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Rab by implementing request evaluations in a router to reduce hop delays associated with forwarding requests.


**6.**     Claims 10-11, 15, 21-22, are rejected under 35 U.S.C. 103(a) as being unpatentable over Rab further in view of Shah et al., U.S. Patent No. 6,298,381.

Rab teaches the invention substantially as claimed including a system and method for allocation requests for objects and managing replicas of objects on a network (see abstract).

As to claims 10-11, Rab teaches the method of claim 1 above.

Rab fails to teach the claimed limitation "wherein the first proximity is determined by a considering whether the first server and the one or more clients are on the same sub-network, wherein content is provided by the first server when the first server and the one or more clients are on the same sub-network and the second server and the one or more clients are not on the same sub-network".

However, Shah teaches a system and method for measuring round-trip time between a client and mirrored sites so that an optimum mirrored site is chosen to serve the content to the client (see abstract). Shah discloses determining proximity by considering whether the first server and the one or more clients are on the same sub-network, wherein content is provided by the first server when the first server and the one or more clients are on the same sub-network and the second server and the one or more clients are not on the same sub-network (see 9-14, Shah discloses considering network exit points with respect to the client's geographic position).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Rab by considering the client's position with respect to its own network  and a second distant subnetwork requests sent outside the client's network. One would be motivated to do so to reduce routing procedures and router burden used to route client's requests.

Claims 15, and 21-22 do not teach or define any new limitations above claims 10-11 and therefore are rejected for similar reasons.


7.     Claims 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over f Aggarwal et al., U.S. Patent No. 5,924,116 further in view of Rab.

Aggarwal teaches the invention substantially as claimed including a collaborative caching of web objects using a cache hierarchy where cache replacement policies are implemented (see abstract).

As to claim 23, Aggarwal teaches a method of releasing stored content items from a server to make room for new content items, the method comprising:

(a) identifying, on the server, a first stored content item and a second stored content item; (b) determining a first proximity between the server and a source of the first stored content item; (c) determining a second proximity between the server and a source of the second stored content item (see col. 7-10, Aggarwal teaches determining the access time to a higher level node for each cached object); and (d) releasing one of the first and second stored content items based upon the relative values of the first and second proximities (see col. 7-10, Aggarwal teaches that the replacement selection logic purges objects in the cache based on cost of retrieval).

Aggarwal does not explicitly teach the limitation "wherein at least one of the first and second proximities is determined by a combination of the following factors: bandwidth, number of hops, congestion, noise and loss on a network segment, and charges incurred to send".

However, Rab  teaches the invention as claimed including a system and method for allocation requests for objects and managing replicas of objects on a network (see abstract). Rab teaches wherein at least one of the first and second proximities is

determined by a combination of the following factors: bandwidth, number of hops, congestion, noise and loss on a network segment, and charges incurred to send (see col. 8, Rab discloses that request for content is sent to the host that has the best fit distance, cost or delay metrics with respect to the requesting client).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Aggarwal in view of the metrics as determined by Rab so that higher resolution measures are taken when serving a client request.

As to claims 24-25 Aggarwal teaches the method of claim 23 above.

Aggarwal does not explicitly teach the claimed limitation wherein the cached items represent a content library or video content. Aggarwal does teach that the objects cached represent any object referenced by a URL on the WEB (see col. 1-8).

However, "Official Notice" is taken that the concept and advantages of caching a content library or video content is old and well known in the data communication art. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Aggarwal by specifying objects representing a video or content library to provide caching for popular items requested on the WEB.

As to claim 26, Aggarwal teaches the method of claim 23 above, wherein the first and second stored content items are identified based upon a cache release protocol (see col. 4-8).

As to claim 27, Aggarwal teaches the method of claim 26 above, wherein the cache release protocol is a Least Recently Used algorithm (see col. 9).

As to claim 28, Aggarwal teaches the method of claim 23 above.

Aggarwal does not explicitly teach the limitation "wherein at least one of the first and second proximities is determined by a combination of the following factors: bandwidth, number of hops, congestion, noise and loss on a network segment, and charges incurred to send".

However, Rab teaches the invention as claimed including a system and method for allocation requests for objects and managing replicas of objects on a network (see abstract). Rab teaches wherein at least one of the first and second proximities is determined by a combination of the following factors: bandwidth, number of hops, congestion, noise and loss on a network segment, and charges incurred to send (see

col. 8, Rab discloses that request for content is sent to the host that has the best fit distance, cost or delay metrics with respect to the requesting client).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Aggarwal in view of the metrics as determined by Rab so that higher resolution measures are taken when serving a client request.

**8.** Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior at does not teach or define neither singly or in combination the limitation of "determining a first loading proximity between a source of the content and the first server; determining a second loading proximity between a source of the content and the second server; and using the first and second loading proximities together with the first and second proximities to determine which of the first and second servers should receive the content".

**9.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saleh Najjar whose telephone number is (703) 308-7613. The examiner can normally be reached on Monday-Friday from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, AN MENG AI, can be reached on (703) 305-9678. The fax phone number for this Group is (703) 308-9052.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-9600. The fax number for the After-Final correspondence/amendment is (703) 746-7238. The fax number for official correspondence/amendment is (703) 746-7239. The fax number for Non-official draft correspondence/amendment is (703) 746-7240.

Saleh Najjar
Primary Examiner / Art Unit 2154